Remarks

This application is a continuation of application Serial No. 09/688,288 filed on October 13, 2000, which is a division of application Serial No. 08/904,855 filed on August 1, 1997, now U.S. Patent No. 6,275,231. Thus, the present application has an effective filing date of August 1, 1997. Applicant submits that Hinde (U.S. Patent 6,483,441) and Urai (U.S. Patent 6,157,294) cited by the Examiner whose filing dates are September 2, 1997 and November 25, 1998, respectively, which are after the effective filing date of the present application, cannot be prior art to the application. As such, it is respectfully requested that the citations of these two references be removed from the records.

The Examiner rejected claims 21-27 and 32-38 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-12 of U.S. Patent No. 6,703,944 in view of Bonar. Although applicant totally disagrees with the Examiner's position, to advance prosecution of the application, applicant submits herewith a Terminal Disclaimer to overcome such a rejection.

The Examiner also rejected claims 21, 22, 25, 26, 28-30, 32, 33, 36, 37 and 39-41 as being allegedly obvious over Chundrlik in view of Bonar. In response, claims 21, 28, 32 and 39 have been amended.

The present invention is directed to a technique for adjusting, through a user interface, a safety distance surrounding a vehicle to avoid a collision with an object. In accordance with the invention, a user may manipulate an indicator (e.g., 529a, 529b, 529c, 529d in Fig. 8) on a display element to define the safety distance. However, by design, the manipulation of the indicator is restricted from defining the safety distance to be smaller than a reference distance, which is a function of at least the current speed of the vehicle. *See* page 18, line 13 *et seq.* of the specification.

Chundrlik discloses an adaptive cruise system. However, nowhere does Chundrlik teach or suggest allowing a manipulation of the indicator on a display element

to adjust "a first distance relative to a reference distance to define a second distance," where such a first distance is "established by a user," as amended claims 21 and 32 now recite. By contrast, in Chundrlik none of the distances including a "desired trailing distance D_D" and an "alert distance D_{alert}" are established by a user. Rather, both of the distances are computed and established by adaptive cruise control 18. *See* col. 2, line 65-66; and col. 3, lines 27-29 of Chundrlik. If anything, it is a driver "reaction time factor Tr [in Chundrlik that is] established by the vehicle operator by operation of the following distance potentiometer 25." Col. 5, lines 20-21. Specifically, in Chundrlik,

> the adaptive cruise computer 18 computes an alert distance
> D_{alert} that is a function of a term based on driver reaction
> time [Tr]. This [driver reaction] term is adjusted in accord
> with the [Chundrlik] invention by control of the following
> distance potentiometer 25 to provide for a driver-controlled
> adjustment of the desired distance D_D to be maintained
> by the source vehicle 10 behind the target vehicle 12. By
> adjustment of the driver reaction term of D_{alert}, the operator
> of the source vehicle 10 may adjust the desired distance D_D
> to accommodate various road surface conditions, the set
> cruise speed, traffic conditions and driver preferences.

Col. 3, line 4 et seq. of Chundrlik. As disclosed at col. 5, line 51, D_{alert} may be generally expressed as a function of a product of the driver reaction time (Tr), and the speed of the source vehicle (V_S), i.e., $D_{alert} = f(TrV_S)$, where as mentioned before only Tr is established by the user by operation of the following distance potentiometer 25. In operation,

> [f]rom the computed value of D_{alert}, the adaptive cruise
> computer 18 then compute the desired trailing distance D_D....
> The adaptive cruise computer 18 then provides to the cruise
> computer 14 a command speed V_C based upon the sensed
> distance D_A between the source and target vehicles 10 and 12
> so as to maintain the desired distance D_D.

Column 3, line 27 et seq. of Chundrlik.

As such, nowhere does Chundrlik teach or suggest any such "first distance established by the user" in claims 21 and 32 as discussed above. *A fortiori*, nowhere does Chundrlik teach or suggest "the manipulation of the indicator [be] restricted from effecting an adjustment of the first distance to be less than zero," as claims 21 and 32 also recite.

Moreover, in Chundrlik,

> [t]he computed value of D_{alert} is also used to provide an indication to the operator of the source vehicle 10 that the distance D_A to the target vehicle is less than the computed value. This is accomplished by energizing an audible alert 26 positioned in the passenger compartment of the vehicle.

Col. 3, lines 9-14; *see also* col. 5, line 66 *et seq.* of Chundrlik. However, such D_{alert} does not meet the "second distance" in claims 21 and 32, a minimum distance by which the vehicle needs to separate from a detectable object before an alert is provided. This is because unlike the second distance, D_{alert} cannot be defined by adjusting the "first distance relative to the reference distance" such that it "exceed[s] the reference distance by the first distance," as required by claims 21 and 32.

Bonar discloses an automatic braking system. However, Bonar does not teach or suggest the aforementioned claim limitations, either. As such, amended claims 21 and 32, together with their dependent claims, are patentable over Chundrlik in view of Bonar. In addition, amended claims 28 and 39 include similar limitations to amended claims 21 and 32. For example, amended claims 28 and 39 similarly recite, among others, that "at least a length of the first zone relative to a length of the second zone [is] established by a user," that "the manipulation of the indicator [is] restricted from defining the first zone to be smaller than a second zone whose area is a function of at least a current speed of the

vehicle," and that an alert is provided "when it is determined that a detectable object outside the vehicle is infringing upon the first zone." For similar reasons, amended claims 28 and 39, together with their dependent claims, are patentable over Chundrlik in view of Bonar.

The Examiner also rejected claims 23, 24, 34 and 35 as being allegedly obvious over the combination of Chundrlik and Bonar in view of Ben Lulu. According to the Examiner, Ben Lulu "discloses a system for detecting objects in the rear and to the sides of a vehicle ...." Office Action at p. 9. Even if, assuming *arguendo*, that the Examiner's characterization of Ben Lulu is accurate, these claims are patentable by virtue of their dependency from amended claims 21 and 32, which are patentable for the reasons set forth above.

The Examiner further rejected claims 27, 31, 38 and 42 as being allegedly obvious over the combination of Chundrlik and Bonar in view of Duncan. According to the Examiner, Duncan discloses "an object indicator for moving vehicles .... " Office Action at p. 10. Even if, assuming *arguendo*, that the Examiner's characterization of Duncan is accurate, these claims are patentable by virtue of their dependency from amended claims 21, 28, 32 and 39 which are patentable for the reasons set forth above.

New claims 43-46 have been added, which are dependent from amended claims 21, 28, 32 and 39, respectively, and are drawn to another aspect of the invention.
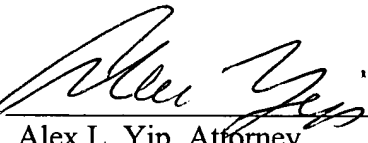
In view of the foregoing, each of claims 21-42 as amended, and claims 43-46 as added, is believed to be in condition for allowance. Accordingly, reconsideration of these

claims is requested and allowance of the application is earnestly solicited.

Respectfully,

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Enclosure